Cogan D (1945) *Archives of Ophthalmology* **33**, 144–149
Cogan D (1948) *Archives of Ophthalmology* **36**, 42–49
Crawford W (1957) *Pennsylvania Medical Journal* **60**, 835
Foster D B & Malamud N (1941) *University of Michigan Medical Bulletin* **7**, 102
McNeil N F, Berke M & Rheingold I M (1952) *Annals of Internal Medicine* **37**, 1253–1267
Middleton W S & McCarter J C (1935) *American Journal of Medical Science* **190**, 291
Oliner L, Taubenhaus M, Shapira T M & Leshin N (1953) *New England Journal of Medicine* **248**, 1001
Peitersen E & Carlsen B H (1966) *Acta otolaryngologica (Stockholm)* **61**, 189–193
Spiegel R (1936) *Archives of Internal Medicine* **58**, 993–1040

Systemic lupus erythematosus in a patient with Hashimoto's thyroiditis and pernicious anaemia[1]

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Mrs M Z, now aged 68 years, presented in 1964 at the age of 55 with a history of intermittent pain and swelling in her hands, and with pain in her elbows and wrists since 1944. She had felt cold, tired and constipated and admitted to dry hair and skin and a deep voice since 1957. A clinical diagnosis of Hashimoto's thyroiditis was supported by the following investigations: protein-bound iodine 1.9 g/100 ml; I^{131} thyroid uptake in 24 hours of 13% (normal 22–50%) with no increase in iodine uptake following thyroid-stimulating hormone administration, and thyroid tanned-cell agglutination titre 1/3200; electrocardiogram showed bradycardia, T-wave inversion and low voltage. Although the haemoglobin was 13.4 g/100 ml, there was macrocytosis present and the serum B_{12} was 130 pg/ml (normal 140–900 pg/ml). Histamine test meal revealed complete achlorhydria. A Schilling test was performed, 8.5% of oral dose was excreted in 24 hours. Immunofluorescent antibodies to gastric parietal cells were strongly positive and the complement fixation titre was 1/128. Antibodies to intrinsic factor were positive on one occasion and negative on another. A diagnosis of pernicious anaemia was made. In 1964, she had no active rheumatoid disease; erythrocyte sedimentation rate (ESR) was 12 mm/h (Westergren) and the latex agglutination titre was negative. She was started on oral thyroxine and vitamin B_{12} injections.

In 1969 the patient developed pain and swelling of the metacarpophalangeal joints of both hands. On examination these joints were hot, tender and swollen, and there was swelling of the proximal interphalangeal joints with Heberden's nodes. The radiographic appearances were those of osteoarthritis superimposed on a primary rheumatoid process. Latex agglutination titre and sheep cell agglutination titre were both negative, and the ESR was 18 mm/h. In January 1975, at the age of 66, the patient presented with a history of diarrhoea for eighteen weeks, and swelling of her tongue and face after starting neomycin.

On examination: The patient was acidotic, pyrexial and dehydrated, with a tachycardia (120/min) and a blood pressure 70/50 mmHg. She had a dry skin, large tongue, angioneurotic oedema and an urticarial rash on her face. During the next few weeks she developed pleurisy and diffuse abdominal pain.

Investigations: On admission she was anaemic (Hb, 10 g/100 ml) and the ESR was 117 mm/h. Chest X-rays showed fluctuating areas of atelectasis and a pleural effusion which was tapped on one occasion. A diagnosis of senile systemic lupus erythematosus was made and confirmed by the presence of lupus erythematous cells and antinuclear antibody (greater than 1600 units

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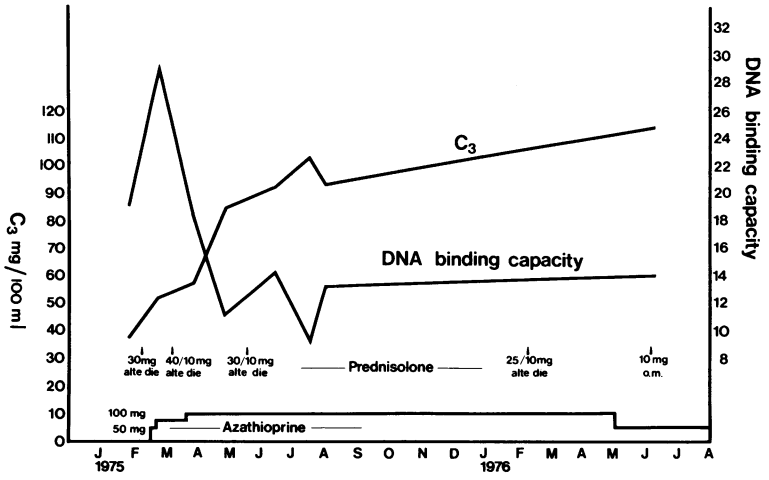

Figure 1. Levels of complement (C3) and DNA binding capacity in response to treatment

IgG class). Complement (C3) was low and DNA binding capacity was elevated (Figure 1). Direct Coombs test was positive.

There was only a mild degree of renal involvement: urinanalysis showed a trace of protein; blood urea varied from 27–50 mg/100 ml (4.5–8.3 mmol/l); serum creatinine was 1.2 mg/100 ml (107 μmol/l); and the creatinine clearance was 44 ml/min.

Treatment and progress

Initial treatment with prednisolone produced a poor response, so the dose had to be increased and azathioprine added. There was slow clinical improvement with the disappearance of her symptoms. Commensurate with this, there was a return to normal of the haemoglobin, a fall in the ESR and an increase in the levels of C3 with a decrease in the levels of DNA binding capacity (Figure 1). Her present treatment consists of prednisolone 7.5 mg/d, azathioprine 50 mg/d, thyroxine 0.2 mg/d, naprosyn 250 mg twice daily, and monthly injections of vitamin B_{12}.

Family history: The patient's mother was crippled by rheumatoid arthritis and the patient's twin brothers, on investigation in 1964, were found to be suffering from Hashimoto's thyroiditis (Austoni *et al.* 1964). In 1971 the younger twin developed diabetes mellitus.

Table 1. Percentage of patients over the age of 60 years with systemic lupus erythematosus in different series

Patients		
Total no. in series	% over 60 years	Series reference
105	5	Harvey *et al.* (1954)
299	6	Kellum & Haserick (1964)
520	3	Dubois & Tuffanelli (1964)
150	2	Estes & Christian (1971)
86	15	Foad *et al.* (1972)

Discussion

Systemic lupus erythematosus (SLE) has been associated with other diseases characterized by autoantibody formation. This is, however, the first case in which SLE has been reported in a patient with Hashimoto's thyroiditis and pernicious anaemia. Roitt *et al.* (1956) first demonstrated that antibody to thyroglobulin was present in the serum of patients with Hashimoto's thyroiditis. Moreover, 3 of their original 27 patients had rheumatoid arthritis. Buchanan *et al.* (1961) noted the presence of rheumatoid arthritis in 6 of 34 patients with Hashimoto's thyroiditis. Hijmans *et al.* (1961) reported 5 patients who had evidence of both SLE and Hashimoto's thyroiditis with positive lupus erythematous cell preparations, antinuclear antibodies and thyroid antibodies.

The information on the genetic aspects of SLE is confusing in that some authors claim a high incidence of rheumatoid arthritis in the families of those with SLE, while others fail to find any correlation in family studies. The present case is unusual in that the patient's mother suffered from severe rheumatoid arthritis, her twin brothers also suffered from Hashimoto's thyroiditis, and one twin brother has become diabetic. A very small percentage of patients with SLE present with diarrhoea and abdominal pain, although gastrointestinal symptoms are fairly frequent manifestations of SLE. The cause of abdominal pain and diarrhoea in this case may be arteritis in the bowel or serositis.

While senile SLE is becoming increasingly recognized, it may be that this patient's disease really commenced in 1944 with arthralgia. Presentation over the age of 60 years accounts for approximately 5% of all cases of SLE (Table 1).

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References

Austoni M, Callegari F & Borini P (1964) *La Folia Allergologica* **11**, 78–84
Buchanan W W, Crooks J, Alexander W D, Koutras D A, Wayne E J & Gray K G (1961) *Lancet* i, 245–248
Dubois E L & Tuffanelli D L (1964) *Journal of the American Medical Association* **190**, 104–111
Estes D & Christian C L (1971) *Medicine* **50**, 85–95
Foad B S I, Sheon R P & Kirsner A B (1972) *Archives of Internal Medicine* **130**, 743–746
Harvey A M, Shulman L E, Tumulty A, Conley C L & Shoenrich E H (1954) *Medicine* **33**, 291–437
Hijmans W, Doniach D, Roitt I M & Holborrow E J (1961) *British Medical Journal* ii, 909–914
Kellum R E & Haserick J R (1964) *Archives of Internal Medicine* **113**, 200–207
Roitt I M, Doniach D, Campbell P N & Hudson R V (1956) *Lancet* ii, 820–821